Chapter 2: Strategic Arms Reduction Treaty and Disarmament of Minuteman II (1990s)

End of the Cold War

Having spent incalculable resources constructing their respective nuclear arsenals, world leaders subsequently spent much of their time and energy in efforts aimed at reducing the risks of nuclear war. Disarmament was one such effort. Presidents Richard Nixon and Gerald Ford negotiated and signed the Strategic Arms Limitation Talks (SALT I and SALT II Treaties) with the Soviet Union in the 1970s with the intent of reducing each country's levels of nuclear arms. SALT I limited anti-ballistic missile installations (ABMs) to two ABMs per country, which, according to historian Michael Kort, rendered them functionally useless and derailed a possible race to develop a missile defense.[i] The SALT I Treaty also put limits on numbers of Intercontinental Ballistic Missiles(ICBMs) and submarine launched ballistic missiles (SLBMs). The subsequent SALT II Treaty, although never ratified by either Congress or the Soviet government, placed additional limits on nuclear arsenals and slowed, but did not end, the arms race.[ii] A slowing of the arms race and a reduction in nuclear armaments had to wait until the early 1990s and the end of the Cold War.

As the political and economic structure of the Soviet Union crumbled during the late 1980s, the lengthy Cold War period came to an end. The Solidarity movement in Poland, a reform effort which began in Poland's dockyards and spread, through the aid of global attention from such luminaries as the Polish-born Pope John Paul II, into a national call for political and economic change, highlighted the new spirit of innovation sweeping through Eastern Europe. By the end of the decade, the Berlin Wall fell, Germany had been reunified, and a number of former Eastern Bloc nations had replaced their Communist regimes with democratically elected governments. As the Soviet Union's republics began asserting their independence, the faltering world power found itself unable to retain its satellite states. Facing increasing isolation, the Soviet Union's political structure disintegrated rapidly.[iii]

The Cold War formally ended in 1991 with the collapse of the Soviet Union, which President Ronald Reagan had once called the "evil empire."[iv] During the conflict, the United States and the Soviet Union were locked in a race to attain military supremacy. The massive nuclear buildup that resulted from the arms race diverted trillions of dollars that might have been spent on domestic programs, but a hot war had been averted.[v] Once the Cold War came to a close, the United States faced the daunting tasks of reducing its nuclear arsenal while simultaneously planning for the nation's continued security.

START Treaty

On 31 July 1991 President George H.W. Bush and Soviet President Mikhail Gorbachev signed the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation

of Strategic Offensive Arms (START Treaty), which limited the number of ICBMs and nuclear warheads either country could possess. The agreement restricted the United States to approximately 8,556 nuclear warheads and the Soviet Union to approximately 6,449 nuclear warheads.[vi] Weapons in excess of the agreed upon number would be disarmed and Launch Facilities destroyed. Congress ratified the START Treaty in October 1992. A month after the signing of this treaty, political dissenters attempted a coup against Soviet leader Gorbachev and the fast unraveling Soviet Union finally collapsed.[vii]

The signing of the START Treaty concluded disarmament talks that had begun almost a decade earlier in the early 1980s. The START Treaty established limits on the number of ICBMs and their Launch Facilities (LFs)and warheads; SLBMs, their launchers and warheads; and heavy bombers and their weapons. The terms of the treaty established a three-phase arms-reduction program. Phase I included preparatory tasks prior to the ratification of the treaty. These tasks included provisions for inspections of the missiles and bombers covered by treaty provisions to verify their technical characteristics and gather basic information on the weapons. Phase II initiated continuous monitoring and inspection activities thirty days after ratification of the treaty to verify treaty compliance. Phase III provided for a continuation of monitoring and inspections during the time the treaty remained in force to ensure that both countries did not exceed the number of weapons allowed by the treaty. Reciprocal onsite inspections conducted by both countries assured compliance with the treaty.[viii] As part of the agreement, both the United States and the Soviet Union could disarm and preserve a certain number of weapons or facilities for interpretation of Cold War history. Museums or sites to recognize the Cold War are being developed in the Ukraine and Russia.

The collapse of the Soviet Union in 1991 complicated implementation of the START Treaty. The centralized Soviet government no longer existed, and Belarus, Kazakhstan, Ukraine, and Russia, as former Soviet republics, all possessed Soviet nuclear weapons covered under the treaty. Negotiators immediately concerned themselves with solidifying the START Treaty. To their relief, the four newly independent states agreed to comply with the treaty and in 1991 negotiated the Lisbon START Protocol, which stated that the Soviet successor states would “make such arrangements among themselves as are required to implement the Treaty’s limits and restrictions….”[ix] Under the protocol, Belarus, Kazakhstan, and Ukraine were to return their nuclear weapons to Russia. Due to Belarus’ concerns about receiving compensation for its nuclear stockpiles and the safeguarding of the relocated missiles, the exchange was not completed until 1994. The countries also signed the Nuclear Non-Proliferation Treaty as non-nuclear weapons states, thereby formally pledging not to acquire nuclear weapons in the future.

Deactivation of Minuteman II Sites

In the United States, the START agreement coincided with growing Air Force disenchantment with the escalating costs associated with repairing and maintaining the older Minuteman II system. Rather than upgrade Minuteman II facilities to Minuteman III technologies, the Pentagon decided to deactivate the entire Minuteman II force to help comply with provisions of the arms-reduction treaty. On 27 September

1991 President George H.W. Bush announced on national television a dramatic “plan for peace,” designed to reduce the tensions of the nuclear age. As one component of his plan, he called for “the withdrawal from alert within seventy-two hours, of all 450 Minuteman II intercontinental ballistic missiles.”[x]

After the signing of the START Treaty and the stand down ordered by President Bush, the Air Force began the deactivation of Minuteman II ICBM sites, including the 150 Minuteman II LFs and fifteen LCFs at Ellsworth Air Force Base in South Dakota.[xi] Additional Minuteman II installations were associated with Strategic Air Command(SAC) bases at Malmstrom Air Force Base in Montana and Whiteman Air Force Base in Missouri. At Whiteman Air Force Base, all 150 of its Minuteman II LFs were imploded by 1997, but the underground Launch Control Center (LCC), Oscar-01, located on base, was retained for public interpretation. The 150 Minuteman II sites at Malmstrom Air Force Base were converted to Minuteman III systems and the necessary missiles were transferred from the Grand Forks Minuteman III installation, which was then deactivated.

A complex system governed the deactivation and dismantlement of the LFs and the LCFs. The individual Air Force bases executed the technical part of missile site deactivation, removing the missiles and other sensitive equipment and then they turned the LFs and LCFs over to the Army Corps of Engineers (Army Corps) and its consultants to begin the demolition of the sites. The Army Corps managed the demolition of the missile sites, much as they had overseen the construction of the sites. The Army Corps contracted the demolition and salvage work to private-sector companies, but these companies needed to comply with procedures governed by the START Treaty. Following the dismantlement, the sites were returned to the Air Force for property disposal.

The landmark START Treaty governed the removal of the Minuteman II missiles and the destruction of the LFs. LF elimination began with the opening of the silo door. From this point forward, the process of deactivating the LF took less than 180 days. A series of agreements between the United States and the former Soviet Union allowed the weapons-grade nuclear material from the warheads to be either used for fuel in nuclear reactors or disposed of along with other high-level radioactive waste.[xii] Hazardous materials were then removed from the site and contractors salvaged steel and other equipment. Destruction of the silos could be accomplished either by implosion to at least six meters (twenty feet) below ground level or by excavating the former silo to a depth of at least eight meters (twenty-six feet). The silo site then had to remain open for ninety days to allow Soviet satellites time to verify that the removal complied with treaty provisions. After the ninety-day period, crews covered the silo with a concrete cap and graded the top of the silo opening with gravel.[xiii] Elimination of the LCFs followed the dismantling of the LFs. Communications systems were dismantled and removed, equipment was salvaged, and hazardous materials removed. The Hardened Intersite Cable System (HICS) was severed to render it inoperable and the underground LCCs were welded shut and the elevator shafts were filled in. [xiv]

Deactivation of Ellsworth Air Force Base's Minuteman II Missiles

The Minuteman II ICBMs at the 44th Strategic Missile Wing (SMW)at Ellsworth Air Force Base became the first missile wing in the country to have its Minuteman II missiles removed under the START Treaty. The deactivation began on 3 December 1991 with the removal of the missile from the Golf-02 silo near Red Owl, South Dakota. The removal of the Air Force's first Minuteman II at Ellsworth Air Force Base in South Dakota marked the beginning of the country's Minuteman II disarmament effort. The last Minuteman II missile in South Dakota was removed from its silo in April 1994. The Air Force conducted numerous studies to minimize economic and environmental impacts on the state and conducted public meetings to solicit input on proposed procedures from residents. The Air Force also disseminated information on silo deactivation through the public meetings and newsletters.

A group of Air Force missile maintainers known as the "Black Hills Bandits" held the responsibility for deactivation of the Minuteman II LFs and LCFs at Ellsworth Air Force Base between 1994 and 1997. [xv] This group of trained missile technicians worked to develop deactivation procedures customized to the needs of the 44th SMW, including lists of items to save, building maintenance plans, and procedures for handling hazardous waste. The procedures were based on guidelines for deactivation developed by the Air Force. The group developed the "44 MW Deactivation Maintenance Plan" that set out a fifteen-day schedule for Minuteman II deactivation. Some challenges specific to the 44th SMW included developing techniques for handling hazardous materials, such as polychlorinated biphenols (PCBs) or mercury bulbs. A plan also had to be developed for the removal of the weapon guidance and authentication system.[xvi] On the eleventh day, the SMW turned the LF or LCF over to the base civil engineering squadron to complete deactivation procedures, including the shutdown of the electrical system.

In addition to the deactivation activities described above, LF sites also required imploding the silos, abandoning or removing the azimuth markers located on private land, filling the silo with rubble, and capping the silo with a concrete lid. Crews also filled sewage lagoons and removed diesel storage tanks at LCFs. The silo door was buried in a fourteen-to twenty-foot-deep hole. The site was then graded to pre-demolition contours and resurfaced with gravel. Non-gravel surfaces were graded and seeded and cathodic protection wells were capped four feet below ground surface. Following deactivation of the fifteen-day deactivation schedule, the sites were placed in caretaker status until the site was turned over to the dismantlement contractor. While in caretaker status Air Force crews maintained the sites, mowing lawns and repairing security fences. Following dismantlement, a second caretaker status ensued until the site was sold to an adjacent landowner. Deactivation procedures were modified for Delta-01 and Delta-09 as they were going to be preserved for interpretative use (see Section III, Chapter 3: Minuteman Missile National Historic Site for more information).[xvii]

Landowner Issues

Prior to the dismantling of the silos, a controversy ensued in South Dakota over the best method of removal. The Air Force proposed to implode the silos to a depth of six meters below ground surface, the

most economical of the two options specified in the START Treaty. Local ranchers expressed concern over the use of this method, fearing vibrations from the explosives would harm the quality of their water in underground wells. Many ranchers preferred the second acceptable option allowed by the treaty, which required the mechanical excavation of the silo to eight meters. The ranchers felt that the second option had less possibility of disturbing the underground water supply. In a state plagued by low annual rainfall, the integrity of the water system formed a rallying point for property owners.

Ranchers' concerns for their water supply and other aspects of deactivation resulted in the resurrection of the South Dakota group, the Missile Area Landowners Association (MALA), a local ranching interest group that had been active during the early years of Air Force land acquisition for silo construction. MALA made property rights and potential civil problems they feared that might result from deactivation central issues in their negotiations with the Air Force. The group focused on potential damage to wells, the release of easements for the HICS on private land, and establishing the right of landowners to have the first opportunity to repurchase land once the Air Force was ready to sell the LF and LCF properties.[xviii] Other issues included the disposal of gravel from the sites, which was a concern for landowners near Red Owl, in northern South Dakota, because it was expensive to get gravel to their part of the state. MALA also presented the option of retaining the silos for grain or water storage; however, this alternative violated the START Treaty and could not be pursued.[xix] Gene Williams and other members of MALA worked to bring attention to their cause and several national newspapers, including *The New York Times* and *San Francisco Chronicle,* and national television shows, including *ABC Nightly News*, *CBS Evening News*, and *The Today Show.* sent reporters to South Dakota. Williams summarized the group's efforts to protect their rights by stating, "It sure looked like we had an opportunity, maybe, to cut some deals for ourselves if we were going to give $100 million to the Ukraine we should be able to give some gravel to the guys around Red Owl."[xx]

MALA successfully lobbied South Dakota representatives to pass legislation specific to the deactivation of the LFs and LCFs, requiring the Air Force to give landowners the right of first refusal to purchase former silo sites located on their property at fair market value. Because the missiles at Ellsworth were the first ICBMs removed as part of the START Treaty, the land purchase rules established for South Dakota set the standard for missile sites across the country.

MALA did not successfully change the method used to destroy the silos. The Air Force had already established stringent specifications for vibration and sound for the implosion that would protect adjacent property. In addition, the Air Force had conducted studies to show that local wells and aquifers would remain intact during the implosion. The Air Force identified two sites for the contractor to demonstrate compliance with these specifications and many people observed the implosion of the first silo which proved to be uneventful. Many landowners were given the opportunity to push the button to implode the silo adjacent to their property. As part of the deactivation process, the Air Force also released its easements for HICS buried on private property. HICS is a hardened, pressurized, buried cable that allowed the LCFs and LFs at the 44th SMW to send messages between facilities.

The release of over 2,800 easements for HICS suggests the number of property owners affected by the placement of this cable on their property.[xxi]

The Air Force clearly spelled out procedures by which landowners might purchase former LFs and LCFs adjacent to their property. If multiple landowners held land adjacent to a missile site, the land was offered for sale to these owners in separate parcels. The General Services Administration (GSA), which coordinated the sale of the LFs and LCFs for the Air Force, offered these parcels to landowners at fair market value. If a landowner opted not to buy the land, the property was offered to government agencies first and if a government agency did not purchase the land, the property was offered for private bid. [xxii] Property owners received written notice from GSA of the terms of the sale and had thirty days in which to accept the offer.

Owners who purchased the former LF sites received a level graded parcel covered with gravel and surrounded by a chain link fence. The former silo stood underneath the gravel, but the silo was filled with rubble and sealed with a reinforced-concrete cap. Deed restrictions on these former LF and LCF sites prohibit installing wells, digging below two feet in depth at LFs or digging over the capsules or elevator shaft at LCFs, and a requirement to maintain drainage on the property. In addition, the new owners of the LCFs could keep the buildings associated with the facility and gained the right to move the buildings, or reuse them for their own needs.[xxiii]

Once the Air Force completed deactivation of the 150 LFs and fifteen LCFs at Ellsworth Air Force Base, the missile sites began to be sold as excess government property. The last Minuteman II LF in South Dakota, Kilo-06, was imploded on 13 September 1996 and the Army Corps completed their deactivation work at the LFs and LCFs on 16 March 1999. After these activities were complete, the Air Force began environmental documentation at the sites in preparation for offering them for sale to adjacent landowners. Beginning in August 2001, the Air Force began selling the first former LF and LCF sites. By 2002 the LCFs had been sold to adjacent landowners, with the exception of Mike-01, which is in the process of being transferred to the Bureau of Land Management. Buildings at all fifteen of the LCFs remain, and one LCF support building complex is currently being used as a residence. The Air Force anticipates selling the remaining LFs by the end of 2003.[xxiv]

The Minuteman Legacy

With the implementation of the START Treaty, only Delta-01 and Delta-09 of Ellsworth Air Force Base and the Oscar-01 LCC at Whiteman Air Force Base in Missouri remain as examples of Minuteman IIs. A comparison of the Whiteman facility and former Ellsworth facility reveals some significant differences. First, Oscar-01 at Whiteman reflects the “controlled response” era of Minuteman design, with its ground support facilities hardened belowground. In contrast, the Delta-01 LCF, formerly of Ellsworth, belongs to the earlier period of massive retaliation, as indicated by the “soft” siting of its support facilities aboveground. Second, the Whiteman site is located on the Air Force Base proper, instead of being dispersed, like the Ellsworth sites, in a remote missile field, as was more typical of the Minuteman basing configuration. Third, Whiteman’s Oscar-01 is not a complete Launch Complex. Not only does it lack a LF, but it also lacks an

aboveground LCF support building. In a typical Minuteman Launch Complex, such as represented by the former Ellsworth Site Delta-01, the LCF support building provided accommodations for Air Force personnel stationed in the missile field, and served as a security control center. Since the surrounding air base provided Whiteman's Oscar-01 with these services, a separate LCF support building was considered unnecessary. The Delta Flight Launch Complex in South Dakota is the only surviving intact example of the original Minuteman configuration, designed to implement the Cold
War policy of massive retaliation and is also the only intact formerly operational Minuteman II site remaining in the United States.

Since the successful completion of the START Treaty, the United States and the Russian Republic have continued their efforts aimed at further arms reductions. A 1994 agreement between the two countries resulted in reprogramming the targeting system of United States and Russian ICBMs and SLBMs. This important though largely symbolic policy shift meant that United States and Soviet nuclear missiles were no longer aimed at each other.[xxv] The START II Treaty, ratified in 1996, mandates elimination of all land based ICBMs with multiple independently targeted warheads and a sixty-five percent reduction in each country's remaining nuclear arsenal. The signing of the Helsinki Protocol by the United States and Russia in 1997, better known as START III, established a framework for future arms reduction negotiations that aims to reduce the number of nuclear weapons held by these two countries by an additional thirty to forty percent.

Clearly the international legacy of the Cold War, at least in terms of its nuclear component, remains. The first two generations of Minuteman, however, do not. Having negotiated an end to the Cold War, Soviet and American leaders recognized a need to remember this crucial moment in global history. Minuteman Missile National Historic Site is one such piece of the past and place of memory, and in the next section we will explore this site's origins as a public space.

Plate 75. Berliners sing and dance a top The Berlin Wall, perhaps the most powerful symbol of the Cold War, on 10 November 1989 to celebrate the opening of East-West German borders *(AP/World Wide Photo)*

Plate 76. President George H.W. Bush (*left*) and Soviet President Mikhail Gorbachev (*right*) signing the START Treaty at the Kremlin in Moscow, 31 July 1991 *(Courtesy of the George Bush Presidential Library)*

Plate 77. Transporter Erector positioned to remove missile, Delta Flight *(Library of Congress, Prints & Photographs Division, HAER SD-50-C-7)*

Plate 78. Missile silo implosion, South Dakota *(Courtesy of the 28th Civil Engineer Squadron, Ellsworth Air Force Base)*

Plate 79. Missile silo being filled after implosion, South Dakota
(Courtesy of the 28th Civil Engineer Squadron, Ellsworth Air Force Base)

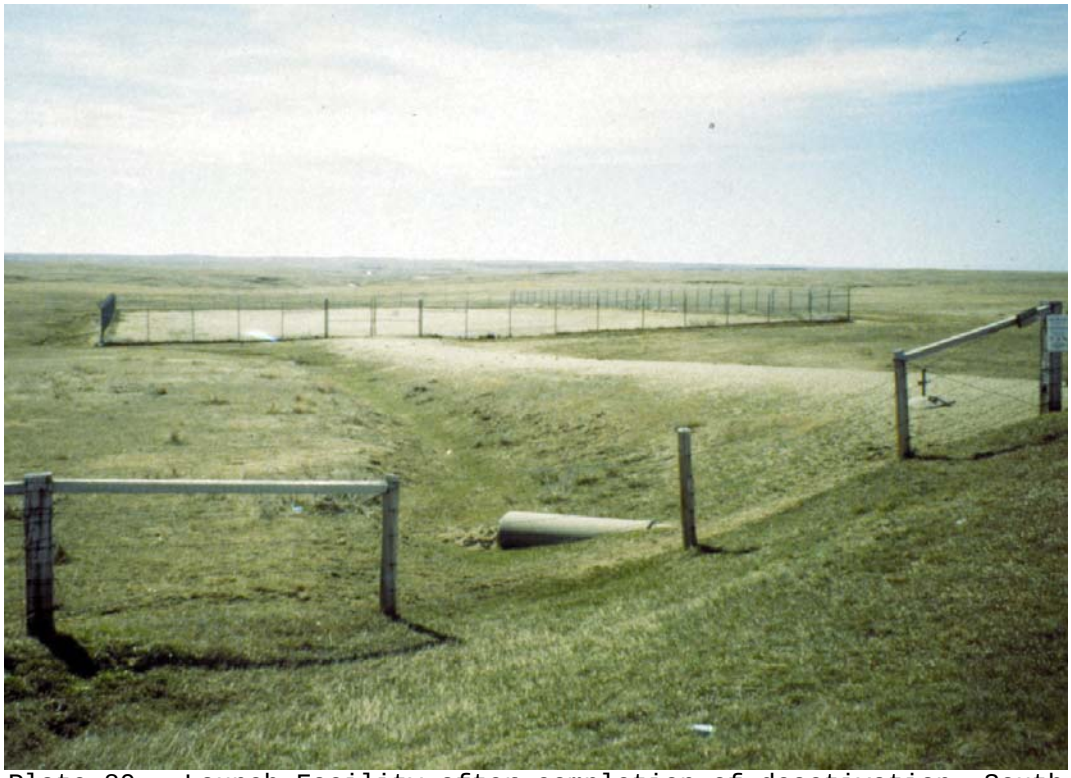

Plate 80. Launch Facility after completion of deactivation, South Dakota *(Courtesy of the 28th Civil Engineer Squadron, Ellsworth Air Force Base)*

[i] Kort, *The Columbia Guide to the Cold War*, 65.
[ii] Kort, *The Columbia Guide to the Cold War,* 66.
[iii] For a concise summary of these events, see "End of the Cold War," *The CQ Researcher* 2 (21 August 1992): 721.
[iv] Kort, *The Columbia Guide to the Cold War,* 162.
[v] Leebaert, *The Fifty-Year Wound: The True Price of America's Cold War Victory*, 642-645; Kort, *The Columbia Guide to the Cold War,* 81.
[vi] "Strategic Arms Reduction Treaty (START)," *AAFM Newsletter* 2, no. 2 (April 1994): 1.
[vii] Kort, *The Columbia Guide to the Cold War,* 106.
[viii] On-Site Inspection Agency, "Strategic Arms Reduction Treaty Fact Sheet," (Washington, D.C.: U.S. Department of Defense, February 1995), 1.
[ix] U.S. Department of State, "Treaty Between the United States of America and the Union of the Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START Treaty)," 31 July 1991; "Strategic Arms Reduction Treaty (START)," 1.
[x] Roig-Compton, "1991 Annual Brief History, 44th Missile Wing," 1.
[xi] "Workers Now Dismantling 300 Midwestern Missile Facilities," *AAFM Newsletter* 2, no. 2 (April 1994): 1.
[xii] Carnegie Endowment for International Peace, "Seventh Clinton-Yeltsin Summit," *Non-Proliferation,* n.d., <http://www.ceip.org/programs/npp/summits7.htm> (17 June 2003); Carnegie Endowment for International Peace, "Clinton-Putin Summit," *Non-Proliferation,* n.d., <http://www.ceip.org/programs/npp/summits7.htm> (17 June 2003).
[xiii] "Minuteman II Deactivation, Environmental Baseline Survey" (Ellsworth Air Force Base, S.Dak., 5 April 2000), Figure 6.
[xiv] U.S. Department of State, "Treaty Between the United States of America and the Union of the Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START Treaty)"; "Strategic Arms Reduction Treaty (START)."
[xv] Lieutenant Colonel Roy A. Griggs and Captain Michael F. Norcross, "Taking Down the 44th Missile Wing" (Ellsworth Air Force Base, S.Dak.).
[xvi] Griggs and Norcross, "Taking Down the 44th Missile Wing."
[xvii] "Minuteman II Missile Realty, Ellsworth AFB, South Dakota: Declaration of Excess (DE) Summary," (Ellsworth Air Force Base, S.Dak. 1 February 2000), 3-4.
[xviii] Williams, interview, 10-12.
[xix] Paul Kemezis, "Missile Soil Demolition Causes Flak for Air Force," *Enginnering News - Record* (12 October 1992): 24.
[xx] Williams, interview, 11.
[xxi] "Minuteman II Missile Realty, Ellsworth AFB, South Dakota: Declaration of Excess (DE) Summary," 3; "Missile Site Deactivation Newsletter" (U.S. Air Force, March 2001).
[xxii] "Missile Site Disposal Newsletter" (Ellsworth Air Force Base, S.Dak., May 2002).
[xxiii] "Missile Plots Offered to Nearby Landowners," *Rapid City Daily Journal*, 15 August 1993.
[xxiv] "Missile Site Disposal Newsletter."
[xxv] U.S. Department of State, "White House Statement on Mutual Detargeting," 14 January 1994, <http://www.fas.org/nuke/control/detarget/news/940114-331576.htm> (16 October 2003).